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The Effectiveness of Adapted Versions of an Evidence-based Prevention Program in Reducing Alcohol Use among Alternative School Students

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Abstract

Although there is a strong evidence base for effective substance abuse prevention programs for youth, there is a need to facilitate the implementation and evaluation of these programs in real world settings. This study evaluates the effectiveness of adapted versions of an evidence-based prevention program, keepin' it REAL (kiR), with alternative school students. Programs are often adapted when used in schools and other community settings for a variety of reasons. The kiR adaptations, developed during an earlier phase of this study, were created to make the curriculum more appropriate for alternative high school youth. The adaptations were evaluated using a quasi-experimental design in which questionnaires were administered at pretest, posttest, and follow-up, and focus groups were conducted at posttest. MANOVA analyses indicate significantly reduced intentions to accept alcohol and, for younger participants, reduced alcohol use. Focus group data support the need for age appropriate prevention content. The authors discuss implications for practitioners implementing prevention programs in schools.

Keywords

Prevention; Alcohol Use; Adolescents; Alternative Schools; Effectiveness Study

Evidence-based substance abuse prevention for youth in schools has evolved greatly in the past two decades. Informational approaches to prevention with little research support have been replaced with interventions that have solid theoretical grounding and evidence of effectiveness with youth (Maibach, Van Duyn, & Bloodgood, 2006). School-based prevention programs are especially important because they have the opportunity to reach large numbers of youth at the time when they are beginning to experiment with substances (Grunbaum et al., 2000). Unfortunately, well-researched interventions are rarely used in school settings (Annett et al., 2003). When these interventions are implemented, they may look quite different from the intervention that was developed and evaluated so thoroughly (Pentz, 2004; Ringwalt, Annett, & Johnson, 2003). These trends call for research that facilitates the implementation and evaluation of evidence-based prevention programs in schools. Program adaptation may be a necessary prerequisite for implementing evidence-based prevention in order to improve its relevance for the target population and setting. This study examines whether participation in adapted versions of an evidence-based prevention program results in reduced alcohol use for alternative school students. The following review of the literature highlights the need for

evidence-based substance abuse prevention in alternative schools and the advantages of adapting prevention programs to meet the needs of particular schools.

Background

Healthy People 2010, a list of national health objectives for the first decade of this century, includes substance abuse as a leading health indicator with an estimated cost to society of \$167 billion for alcohol abuse and \$110 billion for drug abuse (U.S. Department of Health and Human Services, 2000). National surveys of high school youth suggest improving trends for many types of substance use in recent years. However, youth continue to report use of many dangerous substances, and alcohol remains the most commonly used substance among adolescents. According to findings from the 2006 Monitoring the Future survey, 72.7 percent of adolescent respondents reported alcohol use during their lifetime, and 60.2 percent used alcohol during the past year (Johnston, O'Malley, Bachman, & Schulenberg, 2007).

Youth in alternative high schools tend to report more frequent use of alcohol and other substances than youth in traditional school settings (Lehr, Moreau, Lange, & Lanners, 2004; Vaughn, Slicker, & Hein, 2000). According to the 1998 National Alternative High School Youth Risk Behavior Survey conducted by the Centers for Disease Control, over 92 percent of alternative school student respondents said they had consumed alcohol at least once, and two thirds had done so during the past month (Grunbaum et al., 2000). Although alternative schools report needing interventions for preventing substance abuse, few studies have examined the effectiveness of prevention interventions in these schools (Kubik, Lytle, & Fulkerson, 2004).

The higher rates of substance use among alternative school students suggest the need for prevention that is appropriate for youth who have already initiated substance use. In order to distinguish programs that are appropriate for populations with varying levels of risk, the Institute of Medicine (1994) has classified prevention programs into three types: universal, selective, and indicated. Universal programs target a general population and aim to deter use of substances by providing information and skills to an entire community. Selective programs target youth who are at greater risk than the general population but may not be actively using substances. An example of a selective program population would be children of adults treated for substance abuse. Targeted programs aim to reduce risk behavior among youth who have already begun to use substances, such as students who have been suspended for possession of marijuana (Institute of Medicine, 1994). Most school-based prevention programs are universal programs; yet, the data suggest that selective or indicated approaches are more appropriate for alternative school youth, many of whom report active substance use (Lehr et al., 2004).

Types of Alternative Schools

Alternative schools vary in their mission and approaches to addressing students' needs. Often, alternative schools serve as disciplinary settings that provide an alternative to expulsion for students who violate school rules, such as possession of drugs and alcohol. Other alternative schools aim to create an educational culture that more effectively meets the needs of youth through providing smaller classes and a wider array of support services (Dupper, 2005).

Raywid (1994) describes three basic types of alternative schools. The Popular Innovations type of alternative school employs techniques identified as effective education practices and may have a programmatic theme. Students enroll in these schools by choice. Students are mandated to attend the second type of alternative school, the Last Chance program, as an alternative to expulsion. These schools aim to change problematic behavior and return students to a traditional educational setting. Remedial Focus alternative schools provide social, emotional, or educational rehabilitation to students with the intention of returning students to a traditional

school. Many alternative schools combine characteristics of all three types of settings. Some schools that function as disciplinary settings, for example, may provide services that foster social and emotional development and incorporate effective educational practices.

Dissemination of Evidence-based Prevention in Schools

Although substance use continues to be a problem in traditional and alternative schools, few school staff members report using evidence-based prevention programs or strategies (Ringwalt, Annett, & Johnson, 2003). The Substance Abuse and Mental Health Services Administration (SAMHSA) has identified critical components of evidence-based programs, such as opportunities for participants to practice newly-learned skills (Schinke, Brounstein, & Gardner, 2002). Similarly, Embry and Biglan (2008) describe evidence-based kernels, fundamental strategies that underlie effective prevention programs. These kernels influence behavior through reinforcement, altering antecedents, changing verbal responses to behavior, or changing physiological states directly. Evidence-based approaches typically use interactive means of conveying information and teaching skills (Annett et al., 2003). In a survey of school personnel who have implemented prevention programs, few respondents reported using curricula or delivery methods that were consistent with evidence-based practice (Annett et al., 2003).

Studies and research reviews that examine substance abuse program implementation often indicate that, when evidence-based prevention programs are used, they are rarely implemented with strict adherence to the curriculum (Backer, 2001; Bergman and McLaughlin, 1978; Flay, 1987; Gottfredson & Gottfredson, 2002). Reasons for poor fidelity in schools include lack of training and support, inadequate resources, large class size, low morale, burnout, and insufficient time (Botvin, 2004). Teachers and school staff members often perceive that evidence-based practices are evaluated with populations that are not representative of their students (Kreuter, Strecher, & Glassman, 1999; Kreuter, Farrell, Olevitch, & Brennan, 2000).

Program Adaptation and Dissemination

Agencies have, fortunately, become more apt to choose a designated “model prevention program”, but the reality is that, as written, the model curriculum may not be a good fit for a given agency or school (Holleran, 2008). One possible means of furthering the adoption of evidence-based practices is to create a structured adaptation process that maintains core, research-based components while allowing communities to tailor the intervention to meet their needs (Castro, Barrera, & Martinez, 2004). This idea has gained popularity in the face of evidence demonstrating that, although many research dollars have been spent developing evidence-based programs, few community organizations use these interventions and, when they do, the curricula are not implemented with fidelity (Castro, Barrera, & Martinez, 2004).

Program adaptation is defined as any deliberate or accidental modifications, such as deleting or adding components, changing the nature of components, changing the way the program is administered, and cultural modifications to the program (Backer, 2001). In schools, adaptation often occurs when the staff member implementing the curriculum makes changes due to personal preferences, time constraints, a need to engage students, or an attempt to make the curriculum more developmentally appropriate for students (Pentz, 2004). Systematic adaptation procedures are critical for ensuring that adapted versions of a curriculum maintain the effective, core components of the curriculum while modifying other components to improve its cultural relevance and goodness of fit within a school. Guidelines for systematic program adaptation include defining parts of the program that can be adapted and parts that should remain unchanged, assessing a program’s theoretical base and core components to ensure that adaptations remain faithful to them, assessing resources and training required for successful

implementation, consulting with the director of the curriculum, involving the community, and documenting adaptation efforts (Backer, 2001; Castro, Barrera, & Martinez, 2004).

Keepin' it REAL

The focus of this study is an evaluation of adapted versions of keepin' it REAL (kiR), a substance abuse prevention program developed by Flavio Francisco Marsiglia and Michael Hecht in collaboration with youth in Phoenix, Arizona. Keepin' it REAL is grounded in Communication Theory and the Ecological Risk and Resiliency Perspective, which guided the process of using student narratives as the foundation for the core components of the curriculum. The curriculum teaches students four different strategies for resisting drug use: Refuse, Explain, Avoid, and Leave (Marsiglia & Hecht, 2005). The curriculum was developed in close collaboration with members of the target population, diverse middle and high school students from a predominantly Mexican American region of Phoenix Arizona (Hecht et al., 2003).

Keepin' it REAL has been evaluated with over 7,000 diverse students in middle schools that were randomly assigned to treatment conditions. Students who received the curriculum experienced decreased substance use and improvements in attitudes about substances and use of resistance strategies (Hecht et al., 2003). The curriculum was designated as a model program by the Substance Abuse and Mental Health Services Administration (Marsiglia & Hecht, 2005).

Adapting keepin' it REAL

The impetus for creating the adapted versions of kiR stems from pilot research conducted by Holleran et al. (2005) that explored youth responses to kiR among adolescents in central Texas, including alternative school students. Participants indicated that the materials did not reflect their culture or life experiences, and they suggested that they could make new videos for the curriculum that would make it more relevant for their peers (Holleran et al., 2005). For example, one of the videos created with Phoenix youth for the original kiR curriculum depicted students break dancing. Students in Texas remarked that "we don't break dance here". Their comments indicating a need for the curriculum to better reflect their language, culture, and life experiences, informed the research questions for the study presented here.

In subsequent research, students at each of four alternative high schools worked in groups to create new videos to illustrate each of four kiR resistance strategies. Students also revised workbook materials to better illustrate the types of drugs used at their school and the contexts in which drugs were offered and used (Holleran Steiker, 2008). Facilitators at each school guided students through a structured process of creating adapted materials by following instructions provided in video and workbook adaptation manuals (Holleran, Hopson, & Gerlach, 2005). The adaptation manuals were important to minimize the time required from school personnel and students to plan the adaptations and to create a systematic adaptation process that would be used at each site.

In each of the alternative schools, groups of students conceptualized, scripted, acted and filmed four drug prevention videos, one for each refusal skill. Because youth participating in the pilot study indicated that the curriculum needed to better reflect their own life experiences, facilitators instructed students to create video scripts about scenarios that at least 75% of the students in each group had personally experienced or witnessed. Students filmed videos on their own school grounds, so the location would be recognizable to the youth and their peers who would later receive the adapted curricula.

In order to create adapted workbook materials, students at each school reviewed the original workbook scenarios and worked in groups to write an alternative version, changing details they

felt would make the scenarios better reflect their own life experiences. This included changing the drugs mentioned in scenarios, language, and the settings in which drugs were offered. Again, the facilitator emphasized that at least 75% of the group would need to have had personal experience with the newly adapted scenario.

Other adaptations were made based on feedback from school staff members and administrators that the original ten-week curriculum was too long, given that some of the students are enrolled in alternative schools for only six weeks. The authors worked closely with developers of KIR to shorten some modules of the curriculum and condense them into six weekly sessions that were 60 to 90 minutes in length (Holleran Steiker, 2008). As with the original version, each session included informational content along with opportunities to develop and practice refusal skills. One session was devoted to learning each of the four resistance strategies: Refuse, Explain, Avoid, and Leave (Hopson, 2006).

The study presented here is part of a larger study conducted by Dr. Lori Holleran Steiker and funded by the National Institute of Drug Abuse (K01 DA017276-01-05), which aimed to evaluate the adapted versions of the curriculum in school and community settings, including a homeless youth shelter, low income housing centers, and a juvenile justice setting. The study was conducted in two phases. The products of phase I were different adapted versions of kiR for each site. These were, then, evaluated during Phase II. The study presented here evaluates the effectiveness of the adapted curricula in four alternative high schools.

Method

Design

This study evaluates the effectiveness of the adapted versions of kiR in four alternative high schools using a quasi-experimental pretest posttest design with a 6-week follow-up. The authors hypothesized that students receiving the adapted versions of kiR would report greater reductions in alcohol use and intentions to accept alcohol than comparison group students.

Participants and Procedures

Four alternative schools were purposively selected for participation based on their interest in implementing a substance abuse prevention program and their ability to participate both in creating the adapted version of kiR and in evaluating the adapted curricula. Two of the schools were disciplinary alternative schools, or schools labeled as Last Chance Schools by Raywid (1994). The two other schools were alternative schools of choice, defined by Raywid (1994) as Popular Innovations schools. Participants were students at these schools between the ages of 14 and 19.

Study procedures were approved by the Institutional Review Board prior to initiating research activities. The researchers worked with principals and staff members at each school to select groups for participation. Groups were randomly assigned to conditions at two sites. In one school, pre-existing problem solving groups were randomly assigned to treatment conditions. In another, entire classrooms were randomly assigned to treatment conditions. Random assignment was not feasible at two of the sites due to administrative constraints. Schools required that groups of students receiving the curriculum be part of a pre-existing group whose purpose was consistent with participation in the curriculum. For example, one school permitted students in their health class to receive the curriculum. Since only one group of students took the health class each semester, students were recruited from the lunch period for the comparison group. Students were required to provide written consent, as well as parental consent for those less than 18 years of age, in order to participate.

The sample at pretest included 70 students, approximately 11 percent of the total population of 797 students attending the four schools. The sample was diverse (13% African American, 49% Hispanic, 27% White, and 16% Other Race/Ethnicity) and similar to the overall population (16% African American, 45% Hispanic, 30% White, and 9% Other Race/Ethnicity). At follow up, the sample of 41 participants after attrition included a lower percentage of African American students (7% African American, 44% Hispanic, 34% White, and 15% Other Race/Ethnicity).

All participating students were administered measures at pretest, posttest, and 6-week follow-up. Students in the intervention group received the kiR modules in 6 weekly sessions that were 60–90 minutes in length. Students participating in the curriculum also participated in a focus group immediately after completing the curriculum. Since experimental and comparison groups were located within each school, students and school personnel were asked not to discuss the curriculum or study procedures with other students to avoid contamination across conditions.

Measures

Students completed the following measures of alcohol use and intentions to accept alcohol. The students responded to items on a range of substances, but the small sample size required that this study focus on alcohol, the most commonly used substance in this sample.

Alcohol Use—Past month alcohol use was measured using three items pertaining to wine, liquor and beer use from the Texas School Survey of Substance Use developed by the Texas Commission on Alcohol and Drug Abuse (TCADA, 2000). Students were asked to indicate how many times during the past 30 days they had used each of the substances. Response categories were as follows: Never used it; 1–2 times; 3–10 times; 11–20 times; and 20 or more times. In order to maximize power with a small sample size and minimize problems with multicollinearity, the authors created a single alcohol use variable. The maximum score for each of the three alcohol use variables was used as the score for the new variable, Alcohol Use. For example, if a student scored 1 for beer use (1–2 times), 2 for wine use (3–10 times), and 2 for liquor use, a score of 2 was used as the score for the new variable, Alcohol Use.

Intentions to Accept Alcohol—Intentions to Accept Alcohol was measured with two items used in the pilot study that were adapted from the questionnaire used in the original KIR research conducted in Phoenix (Holleran et al., 2005). Students were asked to identify the extent to which they agree with the following statements: If someone offered, I would accept beer or wine; If someone offered, I would accept liquor. Response categories were represented as follows: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree. For the purposes of this analysis, the two alcohol acceptance variables were combined into a single summed scale to reduce the total number of variables in the analysis. Scores for each of the measures were added to result in a summed score for Intentions to Accept Alcohol.

Reliability and Validity—The items for alcohol use came from The Texas School Survey of Substance Use, which was extensively tested for validity for use with students in grades seven through twelve. The survey includes quality control measures to promote confidence in the validity of the results (TCADA, 2000). These items were also pilot tested with a sample that included alternative school participants and were found to have good internal consistency ($\alpha = .7994$) (Holleran et al., 2005), and reliability analyses conducted for this study demonstrated strong internal consistency ($\alpha = .90$).

The original items measuring intentions to accept offers came from the questionnaire used in the original KIR research in Phoenix and demonstrated good internal consistency ($\alpha = .82$) (Hecht et al., 2003). The adapted items used to measure intentions to accept offers of alcohol also demonstrated strong internal consistency in a pilot study that included alternative school participants ($\alpha = .95$) (Holleran et al., 2005), and reliability analyses conducted for this study demonstrated strong internal consistency ($\alpha = .92$).

Analysis

All quantitative analyses were conducted using SPSS software. Pretest group differences on demographic variables were tested using chi-square and t-test. T-tests were also used to assess for differences between groups at pretest on the dependent variables. A repeated measures Multivariate Analysis of Variance (MANOVA) was used to test for group differences in changes on the dependent variables over time. Age was included in the analysis as a control variable because preliminary analyses indicated that there were significant age differences between groups at pretest. The data were not normally distributed, limiting the power of the analysis. For this reason, non-parametric Friedman's analyses for k related samples were conducted and are reported with the univariate MANOVA results below. The Mauchly's Test of Sphericity was used to test whether the variance matrix is circular in form. The test was not significant, indicating that the data do not violate the assumption of sphericity for the dependent variables.

Focus groups were audio-recorded and transcribed verbatim. Analysis of the focus group data began with open coding of focus group transcriptions in which the two authors independently assigned codes to statements related to the research questions. The transcriptions were analyzed for themes related to substance use, attitudes about substances, attitudes about the curriculum, and helpful prevention strategies for the participants. The authors analyzed transcriptions independently and manually assigned codes to pertinent statements. Each author independently developed a list of preliminary codes and met after coding transcripts to achieve consensus on the preliminary codes. This process was repeated three times to combine related codes and achieve the final list of codes and themes. Every theme was a result of ideas that occurred repeatedly in each of the focus groups. The coding procedure continued until codes reached the point of saturation (Strauss, 1987; Lofland & Lofland, 1995).

Results

Baseline Group Comparison

Although 70 students completed the pretest and posttest measures, the main analyses for this study include only the 41 students who remained in the study until the six-week follow-up. Table 1 provides demographic characteristics of experimental and comparison group participants along with results of analyses examining group differences at pretest. Age was the only demographic variable that differed significantly by group at pretest ($T = 2.59$, $df = 38.6$, $p = .013$).

Groups were also evaluated for differences at pretest on the dependent variables. There was a significant difference in intentions to accept alcohol, with the experimental group reporting greater intentions to use alcohol at pretest ($T = 2.462$, $df = 38.525$, $p = .02$). Lower scores indicate greater intentions to accept an offer of alcohol.

Alcohol Use and Intentions

The repeated measures MANOVA (2 groups $\times$ 3 times $\times$ 2 dependent variables) indicates a significant difference between groups over time on the dependent variables ($F = 3.52$, $p = .02$), with a moderate effect size ($\eta^2 = .34$). The interaction between age, group, and time is also

significant ($F = 3.096$, $p = .03$) with a moderate effect size ($\eta^2 = .31$), indicating that the age influences group differences on the dependent variables over time. The multivariate analysis was followed by univariate analyses and a post-hoc analysis of age differences. Univariate results are described in detail below and presented in Table 2 along with means and standard deviations for each dependent variable. Lower scores on Intentions to Accept Alcohol indicate greater intentions to accept an offer of alcohol. Lower scores on Alcohol Use indicate lower usage.

The variable, Intentions to Accept Alcohol, is a summed scaled created by combining scores for the two original variables in the questionnaire, Intentions to Accept Wine or Beer and Intentions to Accept Liquor. The results of the univariate test indicate that there is a significant difference in Intentions to Accept Alcohol between groups over time ($F(2, 60) = 5.25$, $p < .01$) with a small to moderate effect size ($\eta^2 = .15$). The original variables are measured on a likert scale with a lower score indicating that a student agrees or strongly agrees that they would accept alcohol if offered and a higher score indicating that the student disagrees or strongly disagrees that they would accept the offer. Although the comparison group was less likely to accept an offer at pretest, the experimental group improved while the comparison group deteriorated between pretest, posttest, and follow-up. The interaction between group, time, and age is not significant ($F(2, 60) = 2.43$, $p = .10$). These findings were replicated with a Friedman's analysis, which indicated a significant change over time for the intervention group ($\chi^2(2) = 7.47$, $p = .02$) but no significant change over time for the comparison group ($\chi^2(2) = .84$, $p = .66$).

The group by time interaction for Alcohol Use is not significant ($F(2, 60) = .64$, $p = .53$). The interaction between group, time, and age is significant ($F(2, 60) = 4.48$, $p = .01$), with a small to moderate effect size ($\eta^2 = .13$), indicating that the age difference between groups may be influencing the change in mean scores over time. The Friedman's analysis indicated that there is a significant change over time for the intervention group ($\chi^2(2) = 6.82$, $p = .03$) but no significant change in scores over time for the comparison group ($\chi^2(2) = .65$, $p = .72$). The Friedman's results indicating reduced alcohol use among experimental group participants call for closer examination of the patterns of alcohol use in this sample. Post hoc analyses were conducted to examine the impact of age differences on alcohol use as described below.

Analysis of Age Differences

The significant effect of age on group differences over time indicates a need to examine results for different age groups. For this analysis, the variable Age was recoded into a dichotomous variable. The mean for age is 16.4, and the sample distribution is evenly divided for students between the ages of 14 and 16 ($n = 20$) and those between the ages of 17 and 19 ($n = 21$). Therefore, the two categories of the recoded age variable consisted of two age groups: one including students between the ages of 14 and 16 and a second, including students between the ages of 17 and 19. Separate MANOVA analyses were conducted for each age group.

Among younger students, there was a significant time by group interaction for the overall effect of the dependent variables ($F = 6.10$, $p = .006$) and a moderate to strong effect size ($\eta^2 = .67$). Replicating the findings for the analysis with all participants, the univariate analyses including only younger participants indicated significant changes in Intentions to Accept Alcohol over time ($F(2, 30) = 5.54$, $p = .01$) with a moderate effect size ($\eta^2 = .27$). The groups also differed significantly in their alcohol use over time ($F(2, 30) = 3.90$, $p = .03$) with a moderate effect size ($\eta^2 = .21$). Alcohol use did not change significantly over time according to the MANOVA results for the larger sample, although the Friedman's analysis indicated a significant change over time among experimental group participants. For the older students, there were no significant effects for the dependent variables over time ($F(4, 12) = 1.19$, $p = .36$), suggesting

that the significant differences found in the main analysis are attributable to changes among younger participants in alcohol use and intentions to use alcohol.

Attrition

Students who dropped out of the study between posttest and follow up were compared with students who remained in the study on scores for the dependent variables. There were no significant differences in alcohol use or intentions to accept alcohol at pretest. The groups were not significantly different at posttest in alcohol use. However, participants who dropped out of the study prior to follow-up were significantly less likely to say they would accept an offer of alcohol at posttest ($T = 2.134$, $p = .04$). This suggests that higher risk youth may have been more likely to remain in the study until follow-up. Relocation was a probable cause for much of the student attrition. For 15 of the 30 students who left the study after posttest, mailings were returned with a stamp indicating that the student was no longer at the address listed. Efforts to contact these students by phone were also unsuccessful.

Overview of Qualitative Findings

Analyses of the focus group data revealed themes that explain the participants' experience of participating in the prevention program. Themes indicated that, despite the student-guided adaptation of curriculum materials, students still felt that the curriculum would be most appropriate for younger students who have not yet initiated use. Students emphasized the need to portray realistic scenarios of substance use among high school students. They suggested the inclusion of content about substances that they consider to be harmful, such as cocaine and heroin, and exclusion of marijuana, which they did not consider to be a drug at all. Alcohol, hallucinogens, and pharmaceuticals were considered as harmful by some students but not by others (Holleran Steiker, 2008; Hopson, 2006).

A theme that emerged frequently in focus groups involves discussing the reasons their peers choose to use substances. Students acknowledged a need for discussing the negative consequences but wanted some discussion of their reasons for using drugs. They sometimes experienced no immediate negative consequences. As one female student stated, "If you say that everyone who tries cocaine is going to become a hard-core coke head, people will be like 'You're so full of crap. Let me prove you wrong'". Some students reported experiencing positive consequences of their drug use, including improved concentration and reduced stress. This theme indicates that non-abstinence based information about substance use may be more appropriate for these students.

Students suggested some strategies for preventing substance use. In the words of one male student, "What I would do is instead of using the scenarios, show someone who is homeless or high school dropouts and just show the long-term effects of drug use and what it can do to your life. A scenario isn't enough to compel me not to do something or to avoid the scenario." They said that hearing others talk about the real consequences of their substance use would have an impact on their peers. Not surprisingly, the adapted video that received the most positive feedback showed peers talking about their own experiences with alcohol and drugs (Holleran Steiker, 2008; Hopson, 2006).

Discussion and Applications to Social Work

The purpose of this study was to evaluate the effectiveness of adapted versions of the keepin' it REAL curriculum. The adaptation was intended to make the curriculum more relevant for alternative high school students by using videos and scenarios they created. The findings indicate that the intervention may have influenced the intentions and behaviors of the younger

students with respect to alcohol use. Younger students reported significant decreases in alcohol use and intentions to accept alcohol, but this effect did not exist for the older students.

Limitations of the study include the small sample size, which limited the number of variables that could be included in the analysis, and non-random assignment of participants to conditions. The attrition between pretest and follow up raises questions about whether the intervention is only helpful for a subset of students. Attrition is especially problematic in studies involving alternative school students because these students change schools more frequently than students in traditional school settings (Rohrbach, Sussman, Dent, & Pun, 2005).

Despite these limitations, the results of this study suggest that an adaptation of keepin' it REAL may benefit younger high school students. Both the quantitative and qualitative data support the idea that the prevention needs of older adolescents differ from those of younger adolescents. This idea is consistent with research on age differences in substance abuse and prevention outcomes (Bonomo & Bowes, 2001; Johnston, O'Malley, Bachman, & Shulenberg, 2005; National Institute on Drug Abuse, 2004; Newcomb, Chou, Bentler, & Huba, 1988).

The lack of evidence-based curricula implemented in schools settings suggests a need for culturally grounded prevention programs. Students are more likely to benefit from curricula that reflect their culture and life experiences (Castro, Barrera, & Martinez, 2004; Gosin, Marsiglia, & Hecht, 2003; Holleran Steiker, 2008). Practitioners are more likely to use a curriculum that is culturally appropriate for their students (Botvin, 2004). Culturally grounded adaptations can also improve recruitment and retention (Kumpfer, Alvarado, Smith, & Bellamy, 2002).

In order to guide practitioners in creating adapted versions of prevention programs that maintain the core, effective curriculum components, it would be helpful for treatment manuals to include systematic, step-by-step adaptation procedures. These procedures would likely include some of the same strategies used for the adaptation discussed here: 1) engaging students and school personnel in a discussion about adaptations that are necessary for successful implementation, and 2) consulting with the curriculum developers to understand the curriculum's theoretical base and core components and ensure that adaptations remain faithful to them. It is also critical to document any adaptations in order to evaluate whether they improved the relevance of the curriculum while maintaining its effectiveness. Since the adaptation process requires time and resources from school staff and students, it is important to know whether the benefits of the adapted curriculum outweigh the costs.

The qualitative and quantitative findings, together, tell an interesting story about substance abuse prevention with this sample. Students strongly emphasize that culturally-relevant curriculum content for their peers includes using a non-abstinence-based approach to prevention. Because many are already using a variety of drugs and have experienced both the positive and negative effects of use, they reject prevention messages that emphasize the most severe consequences. Instead, they want to hear stories and testimonials that reflect realistic experiences with substance use. The curriculum evaluated here, they argued, was more appropriate for younger students since it promoted abstinence. The quantitative data support these views to the extent that program effects were only evident for younger students.

Recognizing that substance use is common and, to some extent, normative among adolescents presents many challenges for school practitioners. Schools may need to strike a balance between acknowledging that many adolescents use substances and emphasizing the consequences of substance use that are meaningful to students (MacMaster, Holleran, & Chaffin, 2005). In this study, for example, students felt that learning about actual negative experiences resulting from substance use would have an impact on their attitudes and behaviors. Specifically, they wanted to hear the stories of people who had been through rehabilitation for

substance abuse or who had dropped out of high school. School practitioners could potentially integrate this experience into a prevention program without normalizing substance use.

These lessons can be applied to future efforts to adapt evidence-based curricula. The message that comes across most strongly emphasizes that curriculum content should illustrate the life experiences of participants. If this is true, adaptation is an important and promising mechanism for making use of the years of research on effective prevention while infusing the curriculum with the participants' values and experiences.

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Table 1

Means and Standard Deviations of Participants' Demographic Characteristics

Group	Experimental N=18	Comparison N=23
Age		
Mean	15.83	16.91
Standard Deviation	1.25	1.41
Range	14–18	14–19
T = 2.59, df = 38.6, p = .013		
Gender		
Female	11 (61.1%)	13 (56.5%)
Male	7 (38.9%)	10 (43.5%)
$\chi^2 = .088$, df = 1, p = .767		
Ethnicity		
Black/African American	1 (5.6%)	2 (8.7%)
Hispanic	7 (38.9%)	11 (47.8%)
White	7 (38.9%)	7 (30.4%)
Other	3 (16.7%)	3 (13%)
$\chi^2 = .622$, df = 3, p = .891		
Alcohol Use		
Mean	1.83	1.39
Standard Deviation	1.38	1.43
T = -.99, df = 39, p = .33		
Intentions to Accept Alcohol		
Mean	4.11	6.04
Standard Deviation	2.05	2.96
T = 2.46, df = 38.5, p = .02		

Table 2

Means and Standard Deviations of Dependent Variables by Time and Group

Variable	Experimental		Comparison		Group	Time	Group × Time	Effect Size	Group × Time × Age	Effect Size
	M	SD	M	SD	(1, 30)	(1, 30)	(2, 60)	(2, 60)	(2, 60)	(2, 60)
Alcohol Use					4.65*	2.36	0.64	0.02	4.48*	0.13
Pretest	2	1.37	1.22	1.48						
Posttest	1.81	1.6	1.06	1.35						
Follow-up	1.19	1.33	0.94	1.11						
Alcohol Intentions					4.97*		5.25**	0.15	2.43	0.07
Pretest	4.19	2.17	6.56	3.07						
Posttest	4.75	2.43	6.17	2.77						
Follow-up	5.06	2.26	5.78	2.92						

NOTE:
* p<.05;
** p<.01